



<b>Job Title</b>	<b>Fire Protection Engineer, Senior</b>	<b>FLSA Status</b>	<b>Exempt</b>
<b>Band</b>	<b>PRO</b>	<b>Probationary Period</b>	<b>12 Months</b>
<b>Zone</b>	<b>9</b>	<b>Job Code</b>	<b>17580</b>

## Class Specification – Fire Protection Engineer, Senior

### **Summary Statement:**

The purpose of this position is to perform a variety of engineering functions for the fire department to ensure improved fire and life safety for the community through specialized education and training. This is accomplished by code compliance and analytical plan review of complex fire protection feature; code consulting and interpretation; risk analyzing; and supporting and engineering assistance. Other duties include assisting fire investigations; developing, implementing, and delivering training classes and materials for internal and external customers; and conducts fire modeling.

### **DISTINGUISHING CHARACTERISTICS:**

This is the advanced journey level class in the Fire Protection Engineer series. Positions at this level possess a specialized, technical, or functional expertise within the area of assignment and may exercise lead supervision over assigned lower level staff. Employees are typically assigned significant responsibilities above the journey level and often exercise independent judgment in the performance of all duties. This class is distinguished in that it performs the most complex work assigned to series or serves in a working supervisory capacity over lower level staff.

<b>Essential Functions</b>	Note: Regular and predictable attendance is an essential function in the performance of this job.
<b>Time %</b> (All below must add to 100%)	Note: Time spent on each essential function will vary based on operational needs and is only intended to be an approximation over the course of a full year.
35%	Performs code compliance and analytical plan review by facilitating and attending meetings; generates plan review comments and reports; performs detailed analysis of potential fire hazards and coordination of various fire protection systems; coordinates fire and life safety aspects of design disciplines; and analyzes hydraulic, battery and other plan specific calculations. Performs complex risk analysis and communicates results with internal and external stakeholders.
25%	Performs various program administration duties by establishing and generating program rules and regulations. Uses various computer programs to create word documents and PDFs in order to publish information online. Performs, develops,



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	implements, and delivers code and fire protection system training for presentations, training materials, handouts, and videos for broadcast.
10%	Performs code consulting and interpretations by facilitating and attending meetings; placing and returning calls; and documenting interpretations. Provides support assistance in emergency situations by providing code consultation for emergency responders. Writes inspection reports, communicates with emergency responders, and provides on-call, after-hours response.
10%	Performs highly complex code compliance inspections by communicating with internal and external customers; generates inspection and other reports; takes notes; takes photographs of code violations; and checks computer usages. Performs technical research on various codes and standards; reads technical journals; performs internet searches; writes reports; and makes recommendations.
5%	Performs large non-routine project supervision. Serves as a point of contact of the design team and identifies alternatives to meet code intentions. As acting supervisor, provides technical and functional supervision over fire code inspections by assigning and coordinating inspections, answering phone calls, and serving as Fire Marshal representative during meetings.
5%	Attends meetings and serves on a variety of committees and boards, including technical planning and review groups.
5%	Evaluates performance based design and alternative methods and materials by reading and reviewing corresponding documents; reviewing required codes and standards; and understanding fire dynamics. Assists fire investigations by generating floor plans of buildings on AutoCAD; researches building history; provides fire dynamics insight; builds and runs computer fire models; and provides cause fault investigation on system activation or failure.
5%	Conducts computer modeling for fire and life safety by understanding inputs and outputs of computer modeling software for fire growth, egress, and traffic movement.

### Competencies Required:



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**Human Collaboration Skills:** Interactions have significant impact and may involve recommendations regarding potential policy development and implementation. Position evaluates customer satisfaction, develops cooperative associations, and utilizes resources to continuously improve customer satisfaction.

**Reading:** Advanced - Ability to read literature, books, reviews, scientific or technical journals, abstracts, financial reports, and/or legal documents. Ordinarily, such education is obtained at the college level or above. However, it may be obtained from experience and self-study.

**Math:** Advanced - Ability to apply fundamental concepts of theories, work with advanced mathematical operations methods, and functions of real and complex variables. Ordinarily, such education is obtained at the college level or above. However, it may be obtained from experience and self-study.

**Writing:** Advanced - Ability to write editorials, journals, speeches, manuals, or critiques. Ordinarily, such education is obtained at the college level or above. However, it may be obtained from experience and self-study.

#### **Technical Skills Required:**

**Skilled in a Technical Field:** Work requires a comprehensive, practical knowledge of a technical field with use of analytical judgment and decision-making abilities appropriate to the work environment of the organization.

**Relevant Background and Formal Education:** Demonstrated skills, competencies, and knowledge required for this job are most often acquired through the following practical experience and level of academic education and training as suggested below.

**Education:** Bachelor's degree from an accredited college or university with major coursework in Fire Protection Engineering or related field.

**Experience:** Five years of full-time fire protection engineering experience and modeling programs and experience in preparing and reviewing plans and specification for construction and fire protection systems.



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Zone	9	Job Code	17580

#### **Education and Experience Equivalency:**

This classification is not eligible for education or experience equivalency.

#### **Certifications and Licenses:** Must possess or be able to acquire the following certifications and/or licenses.

Certified Fire Protection Specialist OR Successful completion of Fundamentals of Engineering Exam OR Professional Engineer (PE) OR Associate Safety Professional	Within 12 months of hire
International Code Council (ICC) Fire Inspector II	Within 12 months of hire
International Code Council (ICC) Fire Plans Examiner	Within 12 months of hire
Hazardous Materials Awareness	Within 12 months of hire
State of Colorado Inspector III/Plans Examiner	Within 12 months of hire
State of Colorado Fire Suppression System Inspector	Within 12 months of hire
ICS 100	Within 12 months of hire
ICS 400	Within 12 months of hire
ICS 700	Within 12 months of hire
Certifications required in accordance with standards established by departmental policy.	

#### **Supervision Exercised:**

Work requires supervising and monitoring performance for a regular group of employees or department including providing input or hiring/disciplinary actions and work objectives/effectiveness, performance evaluations, and realigning work as needed. A first line supervisor typically performs these functions.

#### **Supervision Received:**

Receives Limited Direction: The employee normally performs the duty assignment according to his or her own judgment, requesting supervisory assistance only when necessary. Special projects are managed with little oversight and assignments may be reviewed upon completion. Performance reviewed periodically.

#### **Fiscal Responsibility:**

This job title has no budgetary responsibility.



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**Physical Demands:**

Exerting 20-50 lbs. occasionally; 10-25 lbs. frequently; or up to 10 lbs. constantly.

Environmental Conditions	Frequency
Primary Work Environment	Office Environment
Extreme Temperature	Seasonally
Wetness and Humidity	Seasonally
Respiratory Hazards	Several Times per Month
Noise and Vibrations	Several Times per Month
Physical Hazards	Several Times per Month
Mechanical and/or Electrical Hazards	Rarely
Exposure to Communicable Diseases	Rarely

**Machines, Tools, Equipment, and Work Aids:** Hose, hose monsters, spanner wrenches, hydrant wrenches, pitot tubes, issued vehicle, drawing scales, calculator, digital scales, handie talkie, common hand tools, SCBA, personal protective equipment, ladders, camera, thermocouples/digital thermometer, computer, printer, copier, telephone, and standard office equipment.

**Specialized Computer Equipment and Software:** Microsoft Office.

*The description above is intended to represent only the key areas of responsibilities; specific job assignments, duties, and environmental conditions will vary depending on the business need of the department and the particular assignment.*

Original Date: August 2021